African Science and Innovation Policy (Interdisciplinary - Policy/Social/Tech)

Strategizing Digital Access in Rural South Africa: A Methodological Approach

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Abstract

Rural areas in South Africa face significant challenges in accessing digital technologies, exacerbating existing socioeconomic disparities. A mixed-methods approach combining quantitative surveys with qualitative in-depth interviews to gauge current digital access levels and identify barriers. Logistic regression models are employed to predict the likelihood of digital adoption based on socio-economic indicators. The surveys revealed a 45% lower internet penetration rate among rural households compared to urban areas, indicative of persistent digital exclusion. The methodological framework provides a robust basis for policymakers and practitioners to design effective interventions aimed at bridging the digital inclusion gap in South Africa's rural regions. Policymakers should prioritise infrastructure development, affordability measures, and community engagement strategies to accelerate digital access among rural populations. Model estimation used $\hat{\{}\theta\}=argmin\{\theta\}sumiell(yi,f\theta(\xi))+\lambda lVert\theta rVert2^2$, with performance evaluated using out-of-sample error.

Keywords: *Geographic, Sub-Saharan, Quantitative, Qualitative, Surveys, Interviews, GIS*

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